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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,609	03/01/2004	Anthony Steve Pearson	SJO920030089US1	9579
45216	7590	11/16/2007	EXAMINER	
Kunzler & McKenzie			HO, BINH VAN	
8 EAST BROADWAY			ART UNIT	PAPER NUMBER
SUITE 600			2163	
SALT LAKE CITY, UT 84111				
MAIL DATE		DELIVERY MODE		
11/16/2007		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/790,609	PEARSON ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Binh V. Ho	2163	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 06 August 2007.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1,5-20 and 24-32 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1,5-20 and 24-32 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 03/01/2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. In view of the arguments presented in the Appeal Brief filed 08/06/2007, prosecution on the merits is reopened to address the issues raised in the Brief. The grounds of rejections in the prior Office actions are withdrawn, and new grounds of rejection are presented here. 37 CFR 1.193 (b)(2) applies:

Where prosecution is reopened by the primary examiner after an appeal or reply brief has been filed, appellant must exercise one of the following two options to avoid abandonment of the application:

- (i) File a reply under § 1.111, if the Office action is not final, or a reply under § 1.113, if the Office action is final; or
- (ii) Request reinstatement of the appeal. If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (§ § 1.130, 1.131 or 1.132) or other evidence are permitted.

#### ***Response to Arguments***

#### **Applicant Argues:**

Dings does not teach creating a copy record from a pre-copy record, the pre-copy record comprising one of the current replication record and the future pre-pairing record. Applicants therefore submit that Dings does not teach all of the elements of claim 1.

**Examiner Responds:**

After reconsidering the prior art in light of Applicant's arguments received 08/06/2007, the Examiner agrees with the Applicant that Dings fails to explicitly teach or disclose creating a copy record from a pre-copy record, the pre-copy record comprising one of the current replication record and the future pre-pairing record.

However, the Examiner respectfully disagrees with the Applicant that the claims are now in condition for allowance. After conducting a further search of the prior art, the Examiner discovered U.S. Patent 5,937,343 issued to Leung et al. It appears that the Leung et al. discloses creating a copy record from a pre-copy record, the pre-copy record comprising one of the current replication record and the future pre-pairing record (Fig. 11A-11B).

The Examiner asserts that the combination of Dings and Leung discloses and/or suggests each and every element of the Applicant's claimed invention. Therefore, the claims remain rejected under 35 U.S.C. 103(a).

**Applicant Argues:**

The disclosure in Dings is limited to dismounting a BCV and does not include the element of breaking a copy pair for a removed source volume present in the current replication record, but not present in the new replication record.

**Examiner Responds:**

After reconsidering the prior art in light of Applicant's arguments received 08/06/2007, the Examiner agrees with the Applicant that Dings is limited to dismounting a BCV and does not include the element of breaking a copy pair for a removed source

volume present in the current replication record, but not present in the new replication record.

However, the Examiner respectfully disagrees with the Applicant that the claims are now in condition for allowance. After conducting a further search of the prior art, the Examiner discovered U.S. Patent 5,937,343 issued to Leung et al. It appears that the Leung et al. discloses breaking a copy pair for a removed source volume present in the current replication record, but not present in the new replication record (Fig. 11A-11B).

The Examiner asserts that the combination of Dings and Leung discloses and/or suggests each and every element of the Applicant's claimed invention. Therefore, the claims remain rejected under 35 U.S.C. 103(a).

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 5-12, 14, 16-20, and 24-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dings (US 6,978,282) in view of Leung (US 5,937,343).

(Claims 1, 11, 17, 20, and 30-32)

4. Dings discloses in figures 1, 5-6, 13-15, 17-19, and 21-24, substantially all of the elements an apparatus for managing multiple copy versions of a source volume, the

apparatus comprising a replication record management module configured to maintain a current replication record descriptive of a current copy version of a source volume; a pre-pairing record management module configured to maintain a future pre-pairing record descriptive of a future copy version of the source volume; a copy record module configured to create a copy record from a pre-copy record, the pre-copy record comprising one of the current replication record and the future pre-pairing record; (col. 7, lines 61-64; col. 9, lines 57 +; col. 12, lines 20-58; col. 14, lines 6-17, 53 +; col. 15, lines 10-17, 40-45, 59 +; col. 18, lines 1 +; col. 19, lines 1 +), except a replication module configured to replicate the source volume on a target volume, create a new copy version of the source volume according to the copy record, and establish a new replication record descriptive of the new copy version of the source volume; and the replication record management module is further configured to compare the new replication record to the current replication record and to break a copy pair for a removed source volume present in the current replication record, but not present in the new replication record. Leung teaches in figures 11A-11B, a new version of the record is created (108, 116), a customer record is updated in the primary site database and that information is transmitted through the signaling network to the secondary site database containing the replicated version of the record. The records are then updated according to the sequence of the version number. The processing of all calls querying the previous version of the primary and secondary site database record is completed before the previous version of the database record is deleted (Abstract, col. 2, lines 62-67; col. 3, lines 1-7; col. 10, lines 20-42). It would have been obvious to one of ordinary

skill in the art at the time of the invention to compare updated version to previous version is completed before the previous version is deleted.

(Claims 5-7, and 24-26)

Dings discloses in figures 5-6, 14-15, 17-19, and 22-24 wherein the replication record management module is further configured to maintain a previous replication record descriptive of a previous copy version (col. 7, lines 18-29, 61-64; col. 11, lines 7-9; col. 12, lines 20-26, 44 +; col. 15, lines 10-17, lines 64-67).

(Claims 8, and 27)

Dings discloses in figures 5, 14, and 17-18, further comprising a target selection module configured to locate a target volume available for use to create a copy version of the source volume (col. 11, lines 5-9; col. 12, lines 44-58, col. 18, lines 1-10).

(Claims 9, 10, 28, and 29)

Dings discloses in figures 14, and 17-18, the copy record module being further configured to verify the future pre-pairing record and to account for a change in one of a source pool and a target pool (col. 6, lines 5-13).

(Claims 12 and 14)

Dings discloses in figures 1, 5, 14, and 17-18, the change in the data copy environment comprising an addition of a source volume to a source pool.

(Claim 16)

Dings discloses in figures 1, 5, 14, and 17-18, wherein dynamically managing the plurality of replication records comprising verifying the current status of a volume in the data copy environment and updating a replication record in response to a change from

a previous status of the volume (col. 7, lines 18-29; col. 12, lines 20-26; col. 15, lines 10-20, 52-67).

(Claims 18 and 19)

Dings discloses in figures 1, 5, 14, and 17-18, the backup manager further comprises a backup information module configured to store the backup information, the backup information comprising a replication record, a volume inventory, a copy pool inventory, and a dataset inventory (col. 12, lines 20-26; col. 15, lines 10-20, 42-45, 64-67).

5. Claims 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dings (US 6,978,282) in view of Ashton (US 6,959,369).

(Claims 13 and 15)

Dings discloses substantially all of the elements, except a removal of a source / target volume from a source / target pool. Ashton teaches in figures 1, 3, 5-6, the storage may comprising an internal storage device or an attached or network accessible storage. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a removal of a source or target volume for convenience.

**Inquiry**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh V. Ho whose telephone number is 571 272 8583. The examiner can normally be reached on M-F from 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don K. Wong can be reached on 571 272 1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Binh V Ho  
Examiner  
Art Unit 2163

  
DON WONG  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100